NEW YORK, NEW HAVEN & HARTFORD RAILROAD, SHELL INTERLOCKING TOWER
(New York, New Haven & Hartford Railroad, Signal Station 22)
New Haven milepost 16, approximately 100 feet east of New Rochelle Junction
New Rochelle
Westchester County
New York

HAER No. NY-299

HAER
NY
60-NEWR
3-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

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HISTORIC AMERICAN ENGINEERING RECORD

NEW YORK, NEW HAVEN & HARTFORD RAILRAOD,
SHELL INTERLOCKING TOWER
(New York, New Haven & Hartford Railroad. Signal Station 22)

HAER No. NY-299

Location: New Haven Milepost 16, approximately 100 feet east of New Rochelle Junction, New Rochelle, Westchester County, New York

UTM Coordinates: 18.602080.4529000 Mount Vernon, New York Quad.

Date of Construction: 1909

Engineer: New York, New Haven & Hartford Railroad

Present Owner: MTA Metro-North Railroad, New York, NY

Present Use: Track and signal maintenance station

Significance: Although the Shell Interlocking Tower no longer contains its original interlocking equipment, it is architecturally significant as representative of the type of structure built by the New York, New Haven & Hartford Railroad during the first decade of the twentieth century. The tower is significant for its association with an important period in the development of the New York, New Haven & Hartford Railroad, and for its original embodiment of state of the art architectural design and electrical engineering technology.

Project Information: This documentation was initiated in accordance with a 1994 Memorandum of Agreement between the Federal Railroad Administration and the New York State Historic Preservation Office as a mitigation measure prior to the tower's demolition to accommodate additional tracks as part of a railroad improvement project on the Northeast Corridor. This documentation was prepared between November 1994 and August 1995 by:

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Washington, DC 20005

Site Description

The Shell Interlocking Tower is located in New Rochelle, New York, at the junction of the New York, New Haven & Hartford Railroad's New Haven main line and the Harlem River Branch line, currently the "Hell Gate Line" of Amtrak's Northeast Corridor. The tower is sited on the southeastern slope of the railroad right-of-way, approximately 35 feet from the tracks, and is bordered by a mixed residential/industrial area on the east and south. According to early maps of New Rochelle, this site was owned hy the J.A. Mahlstedt lumber and coal yard. The railroad took over a small portion of the site to build the interlocking tower, hut it appears that the coal yard was still active in 1949. As with other sections of railroad right-of-way, this site has experienced a slow decline and deterioration since World War II. It is presently overgrown with vegetation, and because the tower has been subject to vandalism, the lower floors have been boarded up, therehy adding to its decayed appearance.

Building Description

Built in 1909, the Shell Interlocking Tower, also known as Signal Station 22, is a reinforced concrete structure with a pagoda-style roof. [See copies of original plans and HAER photographs accompanying this report.] The huilding is three stories high, with a footprint measuring 36 feet by 25 feet. The roof is covered with terra cotta tiles and has a 4-foot overhang with exposed rafters. The roof's east slope features a concrete chimney, which serviced the building's hot water heating system, originally located on the ground floor (referred to as the basement on the original plans.) The tower's concrete walls are 2 feet thick at the lower level and 1 foot thick on the middle and top floors, and are reinforced with 5/8-inch-diameter corrugated rods. Access to the upper floors is gained via an exterior wrap-around stairway, with ornamental iron railings and wooden treads and landings. The lower stairway assemhly has been replaced with a modern steel stairway, and a metal awning has heen installed over the stairway platform on the north side. The tower has rounded corners, a projecting 10-inch-wide molded beltcourse between the middle and top floors, and a slightly recessed three-centered arch molded into each facade at the level of the middle floor. At each corner, just below the beltcourse, is a molded shield with the railroad signal station numher.

Fenestration is symmetrically ordered on each facade. Openings at the ground floor and middle floor have three-centered arch heads, while the openings at the top floor are rectilinear. The lower level has a pair of windows and a pair of wood panel doors on the rear facade. Above each opening there is an elliptical louvered wooden transom, faced on the interior with a larger, rectangular side-hinged, wooden door. The middle floor has four arched windows on the front and rear facades, and two arched windows on the north facade. The original pair of sliding paneled doors on the south facade has been replaced with a single door and the opening infilled with claphoard siding. The top floor has a hand of one/one douhle-hung windows on each facade, except for the rear, which has only a pair of windows. At an unknown date, a pair of double-hung windows on each side of the southwest corner of the top floor was replaced with twelve-light metal industrial sash and a hopper midsection. This was prohahly done to allow greater visihility for the tower operators.

A brick relay station, which housed transformers and other electrical equipment, is located on the east side of the tower. The relay station probably dates to 1949, when the mechanical switches were changed over to electric switches. A series of electrical cables, most of which have been disconnected, runs between the relay station and the tower. These cables originally fed electricity to the tower for interlocking and signal equipment, as well as for general use. There is a small squared opening for mechanical rods and electrical cables on the west side of the building at grade level, just below one of the middle floor windows. The old electrical cables have been disconnected and are lying on the ground beside the building. According to John Flannery, who worked at the tower for many years, there were about ten of these openings, through which ran the iron control rods for switch activation. These openings were sealed up when the rods became obsolete, and the one remaining opening was used for cable exits from the building.

Investigation of the tower's interior revealed that the interlocking machinery has been removed. The only equipment remaining is a track model board (not original) for backup control of the interlocking switches and signals and a Union Switch and Signal Company[1] timer installed on the west wall of the top floor. The ground floor contains the furnace room and a storage area; the middle floor is used by employees who service the electrical equipment and catenary system; and the top floor is used as headquarters for employees who maintain the tracks and switches. Some original interior details remain, including built-in wooden lockers, beaded board ceilings and a molded cornice, window and door trim, iron radiators (non-functioning), and various conduits, pipes, and cables.

The exterior of the Shell Interlocking Tower is in fair, but deteriorating condition. It has remained largely intact, although the concrete is cracking and spalling in some places, and a number of rafters and roof tiles are broken, particularly along the east and south eave lines. Major alterations to the structure since its construction include:

- Interlocking machinery and switches replaced, 1947
- New exterior doors and steel stairway installed, ca.1989
- Interior partitions installed on top floor, ca.1992

Development of the New York, New Haven & Hartford Railroad and Shell Interlocking

In 1846 the New York, New Haven & Harlem Railroad (which later became New York, New Haven & Hartford Railroad) laid tracks through New Rochelle. This led to increasing economic prosperity and industrial development in the area. New Rochelle became a commuter suburb for New York City, thereby increasing demand for rail transportation.

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[1] Union Switch and Signal Company manufactured and installed the interlocking and signal equipment at Pennsylvania Station, and may have installed similar equipment along the connecting railroad lines, including the New York, New Haven & Hartford main line through New Rochelle. (See: Fred Westing, "The Signals and Interlocking System of the Pennsylvania Terminal," in Penn Station, Its Tunnels and Side Rodders (Seattle: Superior Publishing Co., 1978). Reprint of 1912 edition of William Couper, History of the Engineering, Construction, and Equipment of the Pennsylvania Railroad Company's New York Terminal and Approaches.

The Harlem River Branch was opened in 1873, running from New York Harbor at Port Morris through New Rochelle, where it joined the main line. The junction at New Rochelle created the need for a system of signals and switches to control cross-overs. No documentation has been found to indicate if an earlier signal tower existed at the junction of the two lines, but it is likely that a switch tender was stationed in a shanty or some rudimentary type of tower at this point to operate the switches.[2] The existing tower is apparently the first tower structure on the site with interlocking capabilities.

In 1904 the New York, New Haven & Hartford Railroad initiated the first large-scale electrification of a mainline right-of-way in the United States, a project that historian Carl Condit has called "a major event in the history of world technology."[3] The New Haven electrification program had two interrelated parts. The first phase was the introduction of electrified operations on the main line; the second phase was the expansion and partial electrification of the Harlem River Branch line. After completion of this program in 1912, the New Haven was operating more than 200 passenger and freight trains per day through New Rochelle.[4] As a result of this electrification, signal towers were constructed or relocated to establish a more efficient spacing of crossover points "*so as to permit the directing of traffic and the changing of traffic from one track to another at the proper distances; and also to provide for the proper sectionalization of the traction system.*"[5]

Original plans for the Shell Interlocking Tower, dated March 1909, and a photograph of the tower which appeared in the February 4, 1910 issue of Railway Age Gazette, establish the tower's date of construction as 1909. The Gazette article described improvements on the Harlem River Branch, including the signal towers:

> *The design of the signal towers is in accordance with the new New Haven standards. Several have been erected, at different points on the New York, New Haven & Hartford, and it is intended to gradually replace old structures with them. These fireproof structures are easy to maintain, and it would seem most desirable to have a safe building for housing the expensive apparatus which is put inside of it. The pagoda roof is not only in keeping with the general style of the building, but is also required for practical reasons. Deep eaves of some kind are necessary to keep the sun out of the windows, as shades or awnings obstruct the clear outlook which the tower men require. The forms used for placing the concrete were of wood, but lined with galvanized iron. This made it simple to mold the rounded corners and gives the concrete a smooth surface.* [6]

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2 See Walter G. Berg, "Watchman's Shanties," in Buildings and Structures of American Railroads, pp. 1-5.

3 Carl Condit, The Port of New York: A History of the Rail and Terminal System from the Grand Central Electrification to the Present (Chicago: University of Chicago Press, 1981), p. 30.

4 Condit cites as many as 400 trains per day at the peak on New Haven's main line; data compiled from NYNH & H R.R. Track Charts and Employee Timetables indicates somewhat lower numbers for 1905 and 1919.

5 Westinghouse Electric & Manufacturing Company, "New York, New Haven & Hartford Railroad Electrification, Special Publication 1698," (Pittsburgh, 1924), p. 26.

6 Railway Age Gazette, February 4, 1910.

Although reinforced concrete technology was not a new phenomenon in 1909, its applications were just beginning to become widespread, and it was superseding brick as the material of choice in the construction of industrial buildings, particularly power plants.[7] The primary considerations in the use of reinforced concrete at the Shell Interlocking Tower were most likely its low maintenance and fireproof qualities, particularly considering all the expensive electrical equipment that the tower contained, and its proximity to the overhead catenary system. Another advantage of reinforced concrete was its ability to resist the strains imposed by reciprocating or revolving machinery, such as engines and generators.[8] Additionally, the use of reinforced concrete would have provided an image of state-of-the-art technology for the railroad, which was undergoing extensive expansion and modernization. "*In this enterprise the railroad company left no stone unturned to produce the best in right-of-way, track, structures, motive power, and rolling stock. ... all combined to provide a distinctive impression of elegant railroad technology.*"[9] The appearance of efficiency, modernity and elegance was additionally important for instilling in passengers a sense of safety and security. Plans for other structures along the New Haven Shore Line dating to the same period, including a number of other signal towers and the Cos Cob Power Plant[10], share common stylistic and architectural features. Reinforced concrete Spanish mission style also predominated in the design of stations along the New York, Westchester & Boston Railroad, being constructed simultaneously with the Harlem River Branch improvements.[11]

Interlocking Technology

An *interlocking* is an interconnected arrangement of signals and switches whose movements must occur in proper sequence to prevent conflicting routes from being cleared at the same time. Early interlocking systems generally consisted of bars and levers, which operated the switches manually. The electro-pneumatic system, invented by Westinghouse Electric and Manufacturing Company in 1883, utilized electric relays, which not only allowed for a greater margin of safety, but were less dependent on human operators, and therefore, more economical and efficient to operate. The area being protected by a group of interlocking signals (i.e., a junction, a bridge or some other vulnerable point) is usually referred to as an *interlocking plant*, and typically featured a two-story tower, which allowed the operator a clear view of the tracks and signals. It housed the interlocking equipment, often including illuminated track diagrams to indicate the position of trains passing through the interlocking. The first interlocking plant in the United States was installed by the Pennsylvania Railroad in 1870. One year earlier, Ashbel Welch, president and chief engineer of the United New Jersey Canal and Railroad Company and inventor of the manual block signal system, visited England to study its railroad interlocking systems. In his report "Station and Switch Tending," Welch described his observations:

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[7] John R. Stilgoe, <u>Metropolitan Corridor: Railroads and the American Scene</u> (New Haven: Yale University Press, 1983), p. 125.
[8] <u>Ibid.</u>
[9] Condit, p. 40.
[10] See Robert Stewart, "The New York, New Haven & Hartford Railroad: Cos Cob Power Plant, HAER No. CT-142A.," (Washington, DC: Historic American Engineering Record), 1993.
[11] Condit, p. 52.

One of the arrangements which is much better in Europe than with us is the working of switches and signals. They have one man in a small glazed room or observatory, who works all the switches and signals anywhere near, in one of the directions from the station. No train can approach the station without signal from him that the track is clear.

A signal and switch man should be under cover, protected from heat, sun, rain, snow and cold, and danger, so that his whole time and attention may be given to his work instead of self protection, and so that discomfort or fear shall not make him nervous, out of temper or negligent.[12]

Signal towers were crucial to the safe and efficient operation of the railroads, and companies spared no expense in ensuring that, as with passenger stations and other structures along the route, signal towers would be both architecturally and technologically the state of the art. Railroad companies often gave their towers nicknames to ensure accurate identification by train crews, and to shorten identification for telegraph transmission--thus, from New Rochelle, the abbreviated term "Shell" Tower. Duties of the tower operator included observing and recording the trains that passed by, controlling signals and crossovers, reporting dangerous conditions, receiving and relaying telegraph messages, and issuing verbal instructions to trains via train orders.

Operation of Shell Interlocking

At the turn of the century, commuter and freight service to New York City underwent a period of rapid development. The expanded freight service to and from southern New England required additional trackage, yards and routes to serve the burgeoning needs of the metropolitan region. The New York, New Haven & Hartford Railroad handled the bulk of this traffic in southern New England. Most of the New Haven's freight traveled along its Harlem River Branch to transfer yards at Oak Point, where it was shifted onto barges, moved across New York Harbor to New Jersey and transferred to southern and western rail links. Through passenger service to Philadelphia and Washington also followed this route until the Hell Gate Bridge was completed in 1917. The Hell Gate Bridge provided the New York, New Haven & Hartford Railroad with access to Pennsylvania Station in New York City and a through rail link to Washington, DC.

The NYNH & HRR main line took a northerly route through the suburbs of Westchester County and allowed convenient transfer to New York's rapid transit system in the Bronx. Eventually the New York, New Haven & Hartford Railroad connected directly with New York Central's lines into Grand Central Station. When the New Haven Railroad expanded its Harlem River Branch in 1904 it also generated a potential safety problem. The Harlem River Branch left the main line just west of New Rochelle Station. The northernmost westbound track had to cross over three other tracks to get to the Harlem River right-of-way. This

[12] J.A. Anderson, "The First Interlocking Plant in America," Railroad Age Gazette 45 (September 25, 1908), p. 992.

junction became the busiest on the system. By 1924, in a normal 24-hour period, 261 trains could pass through New Rochelle Junction.[13] The possibility for accidents and collisions was substantial. An adequate system of signals and a means of blocking access to active tracks for eastbound trains was essential. Figure 1 illustrates the junction at New Rochelle.

The railroad addressed the safety and traffic management problem by installing a series of interlocking switches. The interlocking system was based on what is known as *Boolean Algebra*[14], although there is no evidence that the railroad engineers knew it as such. It is a practical form of "and, or, not" logic. If a switch was thrown allowing a train to cross active tracks, electro-mechanical linkages and relays were programmed to logically block operations of adjacent switches and prevent operating a switch which might inadvertently route another train into a possible collision or derailment situation.

The mechanically operated switches actuated a set of cam and roller electrical contacts in an adjacent housing that signaled the position of the switch to the tower operator. These also controlled the electrical circuitry that operated semaphore signals along the right-of-way that told the train operator to proceed or stop. In principle, the system was a simple, but physically large, electro-mechanical computer with an electrical readout to display status of individual components.

The switches near the Shell Interlocking Tower were operated mechanically by a series of 38 levers the operators referred to as "bull sticks." Figure 2 illustrates the layout of the operator's station in the tower. Two levers were required for each switch, one to move the switch points and one to lock it. The levers were mechanically connected to the switches on the track bed through "pipes" which were 1-inch-diameter hollow iron rods linked to the moveable switch points by a system of bell cranks and levers. Rods were supported and constrained at intervals by small rollers which helped maintain a straight thrust and insured that the rod would not bend.

Before a switch could be moved, the operator had to squeeze a grip on its lever which closed an electrical contact and activated a "back lock relay" commonly called a "BLR." This relay was located adjacent to the switch outside the tower. It mechanically withdrew a small plunger bar that unlocked a locking mechanism. This in turn allowed the operator to fully unlock the switch by moving the lever. The back lock relays of all switches were electrically interconnected and could not be activated unless the signaling system showed the track was clear. The tower operator then opened or closed the switch by actuating a second lever which was connected to the switch points. This set the "near end" of the switch to allow traffic to proceed in the desired direction.[15] The locking lever was then thrown to lock the switch in the new position. If the plungers and pins did not engage properly, the back lock relay would not allow the switch to be locked up. A light on the train board indicated a non-lock condition to the operator. Figure 3 shows a plan view of a switch and its linkages.

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[13] Statkowski, pp. 24-28.

[14] Boolean Algebra was developed by George Boole, an English logician, who in the late nineteenth century devised "laws of thought" or propositional calculus, and took the first steps toward artificial intelligence (Hofstadter 1979:601).

[15] Robert Routledge, Discoveries and Inventions of the Nineteenth Century (New York: Crescent Books, 1989, republication of original 1890 edition), p. 76.

The electro-mechanical system was replaced with a fully electrical system starting in 1948. The mechanical lever actuated switches were supplanted with motor operated electrical switches. This made it possible to operate the junction from a central control room located in New York City.

Present Operation and Use

Official operations at the Shell Interlocking Tower ceased on June 18, 1978. Since that time, the interlocking is controlled by centralized traffic control (CTC) from Manhattan, in order to provide for decreased maintenance and increased reliability. Modern electrical relays and signal circuitry at New Rochelle are housed in metal relay boxes adjacent to the right-of-way. The tower is presently used primarily as headquarters for track maintenance crews.

Currently, plans are underway to reconfigure Shell Interlocking to reduce at-grade train conflicts and eliminate delays. The project, known as the *Shell Flyover*, includes depression of the two Metro-North tracks and elevation of the Amtrak line tracks on an overpass, along with modifications to the existing interlocking configuration. With the construction of the Shell Flyover, the Shell Interlocking Tower will be demolished to allow clearance for the elevated Flyover structure and track realignment.

Significance

The Shell Interlocking Tower is typical of the signal towers built by the New York, New Haven & Hartford Railroad during the first decade of the century. These signal towers were almost all of reinforced concrete construction, with Spanish mission details predominating in the designs. Shell Interlocking Tower is one of a half-dozen NYNH & HRR pagoda-style signal towers that survive along the railroad right-of-way between Rhode Island and New York. These signal towers exist at Westerly, RI; Cos Cob, Bridgeport, Stamford and Groton, CT; and New Rochelle, NY. The Groton tower, which closed December 2, 1994, was the last active early twentieth century New Haven tower.

Although the Shell Interlocking Tower no longer contains the original interlocking equipment, it is architecturally significant as representative of the type of structure built by the railroad during the first decade of the twentieth century. It has been a landmark in New Rochelle since its construction. It is significant for its association with an important period in the development of the New York, New Haven & Hartford Railroad, and for its original embodiment of state-of-the-art architectural design and electrical engineering technology.

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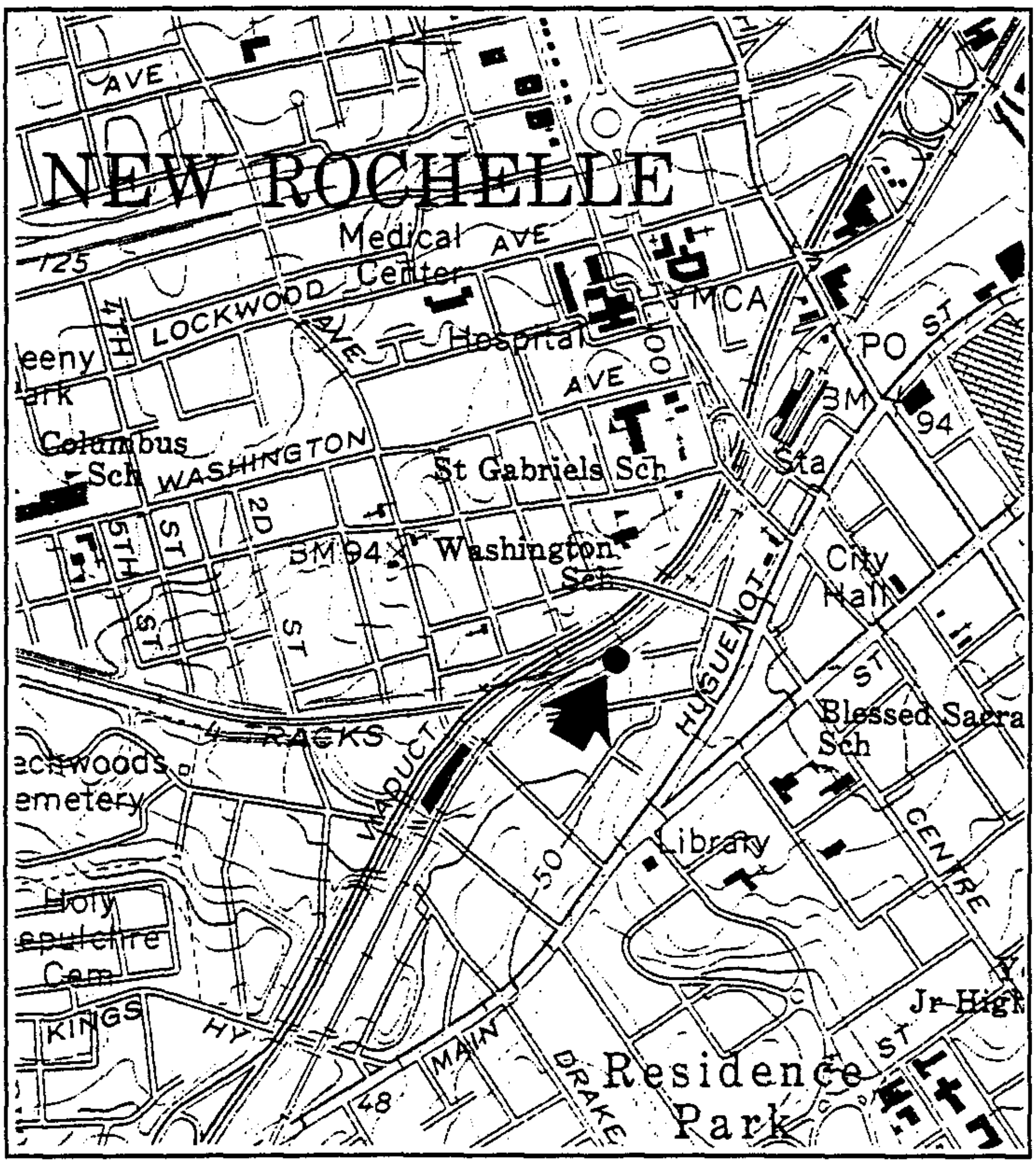


Location Plan

North

1 inch = 1000 feet

Source: U.S.G.S. Mount Vernon, NY Quadrangle, 7.5 Series, 1979.

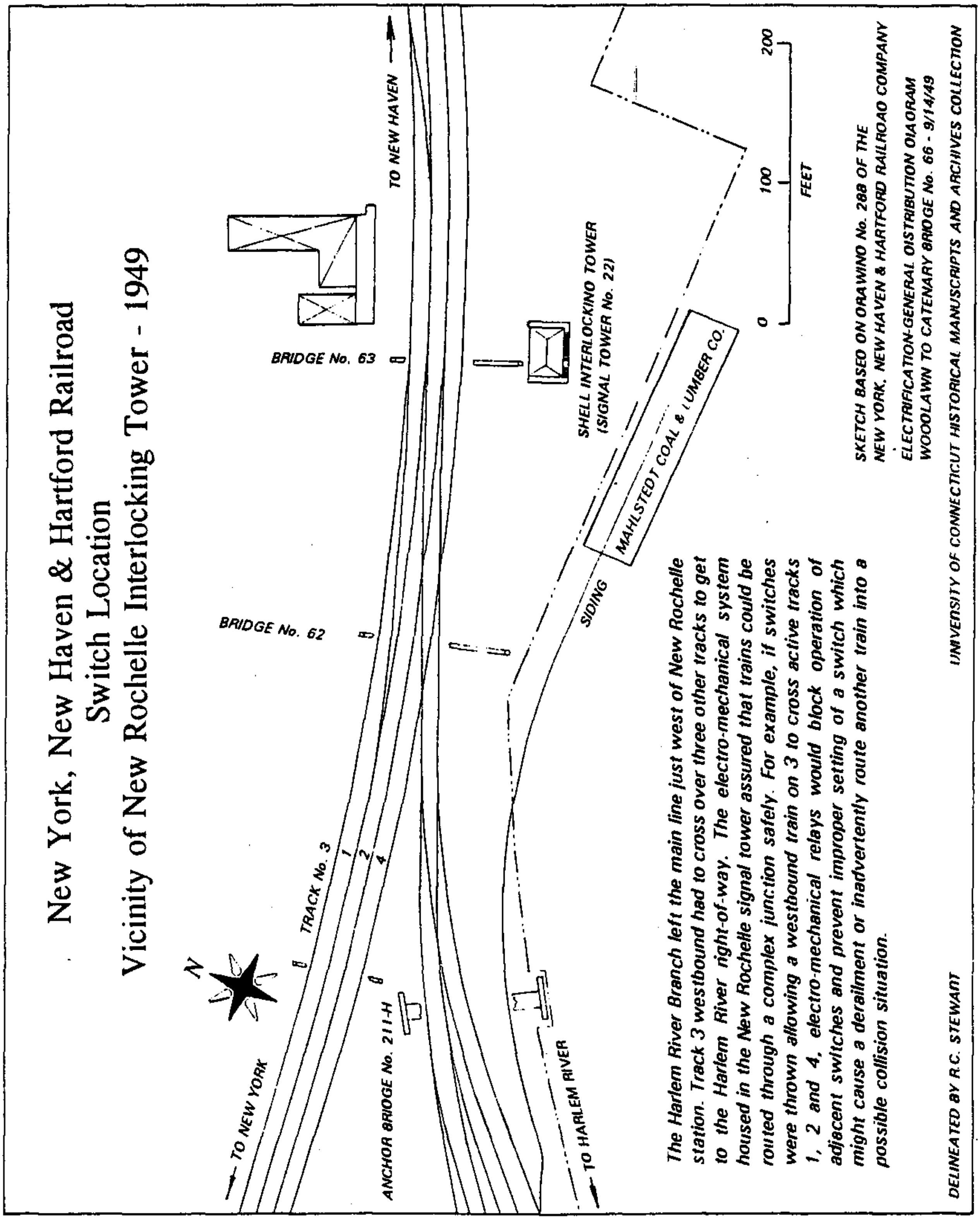
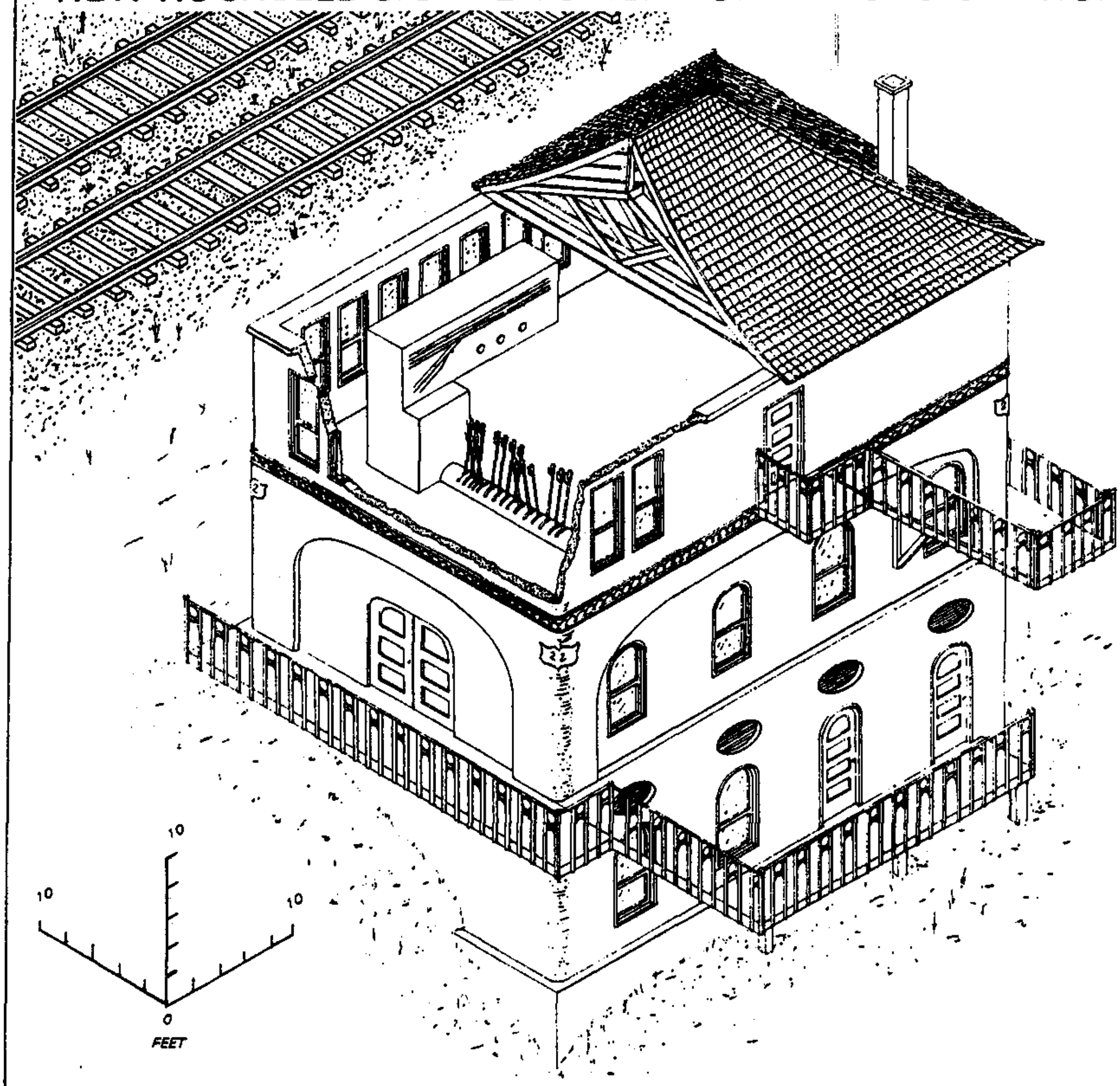


Figure 1. Delineated by Robert C. Stewart, 1994.

NEW ROCHELLE SIGNAL TOWER - OPERATORS STATION



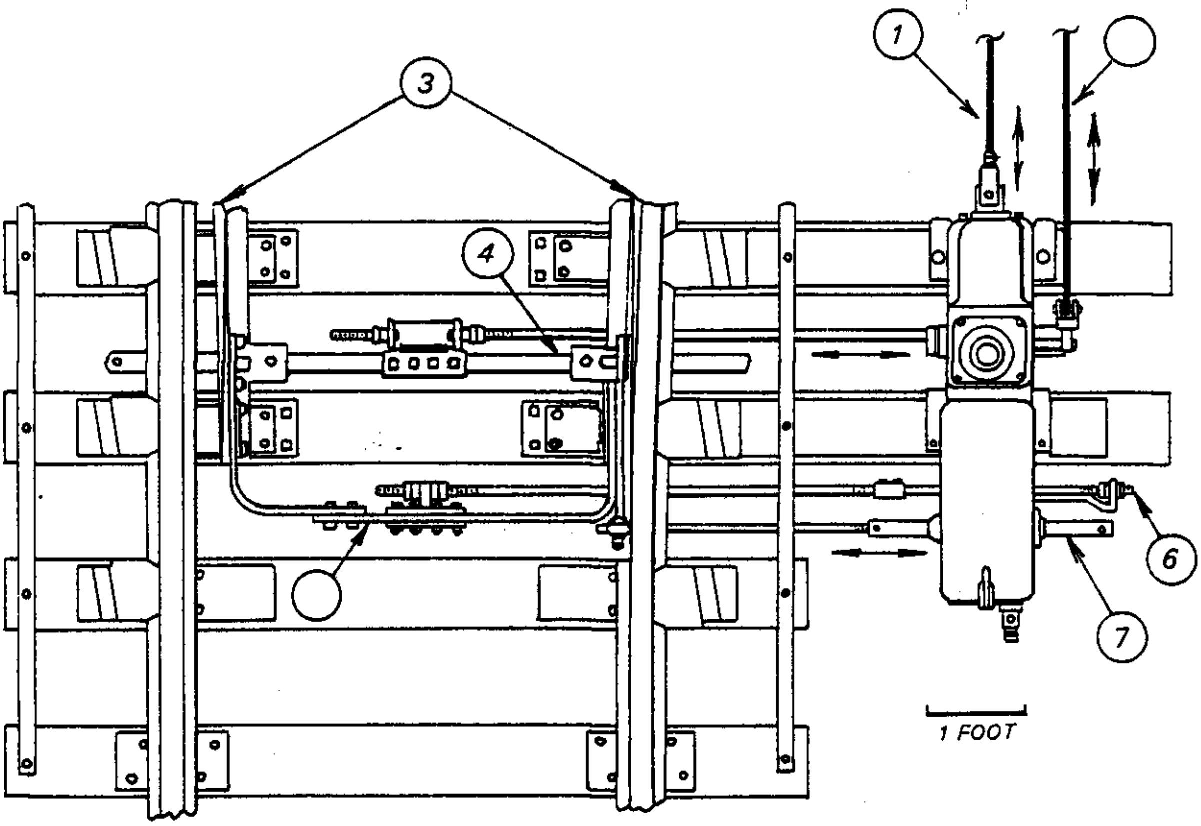
TRACK SWITCHES WERE ACTUATED MECHANICALLY BY A SERIES OF LEVERS WHICH WERE CONNECTED THROUGH IRON RODS AND A SYSTEM OF BELL CRANKS, LEVERS AND GEARS. THE LEVERS WERE ALSO CONNECTED TO A SYSTEM OF ELECTRICAL RELAYS. POTENTIAL COLLISION SITUATIONS WERE BLOCKED BY THE ELECTRO-MECHANICAL RELAYS WHICH REGULATED OPERATION ACCORDING TO LOGICAL RULES. SYSTEM OPERATING CONDITIONS AND SIGNAL POSITIONS WERE DISPLAYED ON A TRAIN BOARD SUSPENDED FROM THE CEILING.

SKETCH BASED ON DRAWING No. 92 - PROPOSED SIGNAL TOWER
NEW YORK, NEW HAVEN & HARTFORD RAILROAD COMPANY
NEW ROCHELLE, NEW YORK - FEBRUARY 1902

DELINEATED BY R.C. STEWART

Figure 2. Delineated by Robert C. Stewart, 1994.

PLAN VIEW - SWITCH MACHINE OPERATION

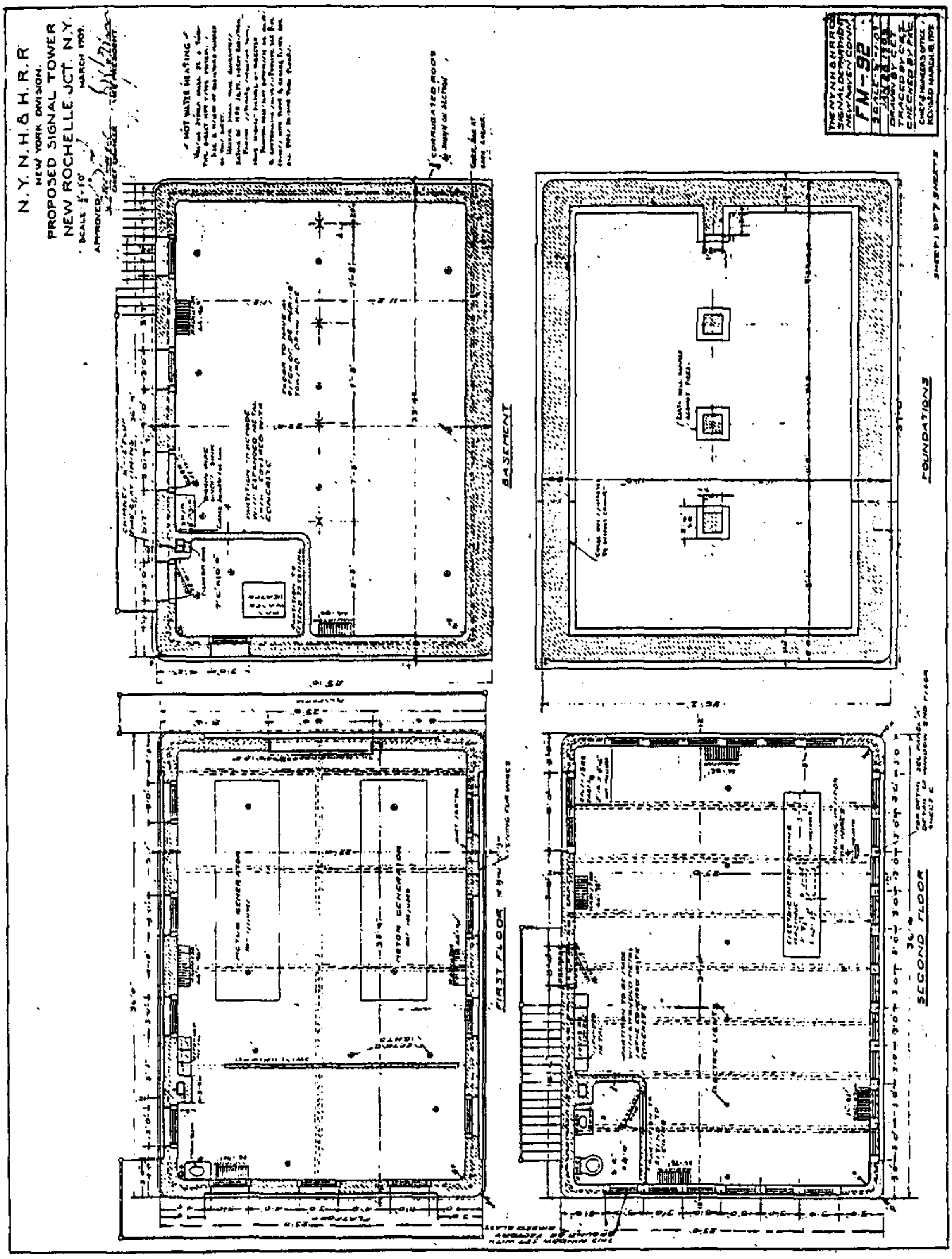


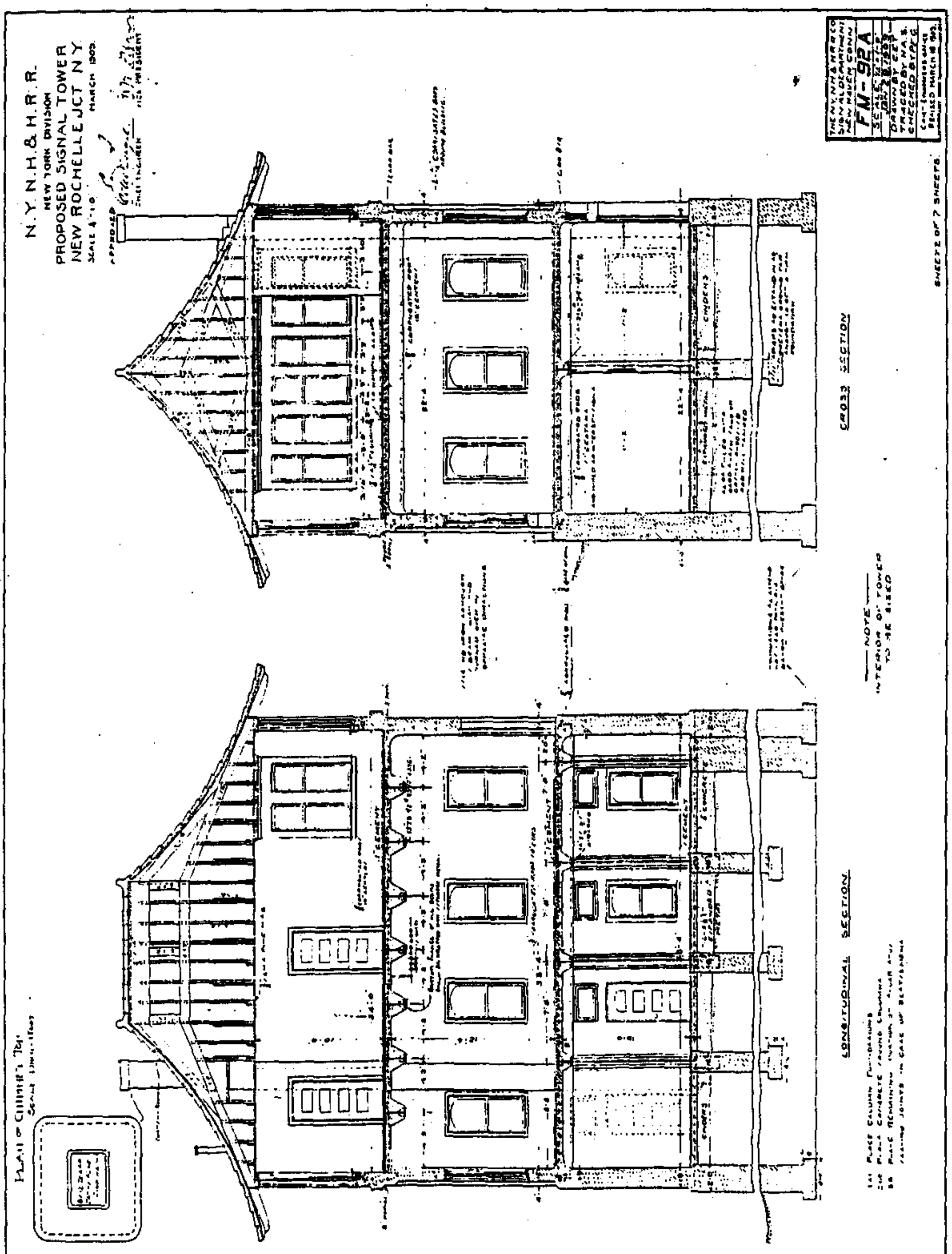
TO MOVE THE SWITCHES USED TO ROUTE TRAINS, THE TOWER SWITCHMAN MANIPULATED ACTUATING LEVERS OR "BULL STICKS." THE MOVEMENT OF THESE LEVERS WAS TRANSMITTED THROUGH LOCKING (1) AND SWITCH THROW (2) RODS TO THE SWITCH MACHINE ADJACENT TO THE TRACK. RACK AND PINION GEARS WITHIN THE SWITCH MACHINE ALTERED LEVER MOVEMENT INTO ACTIONS WHICH UNLOCKED THE SWITCH, MOVED THE SWITCH POINTS (3) WHICH WERE LINKED WITH A BAR (4) AND LOCKED THEM INTO THE NEW POSITION THROUGH THROUGH A LOCK/DETECTOR BAR (5). THE LOCK ROD (6) SECURED THE SWITCH POINTS IN POSITION. A MECHANICAL DETECTOR BAR (7) SENSED THE POSITION OF THE SWITCH AND RELAYED THE SETTING TO A SENSING PIN WITHIN THE SWITCH. SWITCH POSITION WAS ALSO DETECTED BY ELECTRICAL CAM AND ROLLER SWITCHES WITHIN THE HOUSING. SWITCH POSITION ELECTRICALLY ACTUATED SEMAPHORE SIGNALS ALONG THE TRACK AND WAS TRANSMITTED TO THE OPERATOR'S TRAIN BOARD AND INTERLOCKING RELAY SYSTEM.

*SKETCH BASED ON GENERAL RAILWAY SIGNAL COMPANY
HANDBOOK 32 - MODEL 9 SWITCH MACHINE*

DELINEATED BY R.C. STEWART

Figure 3. Delineated by Robert C. Stewart, 1994.


N. Y. N. H. & H. R. R.
NEW YORK DIVISION
PROPOSED SIGNAL TOWER
NEW ROCHELLE JCT. N.Y.
BASEMENT
FOUNDATIONS
FIRST FLOOR
SECOND FLOOR
FM-92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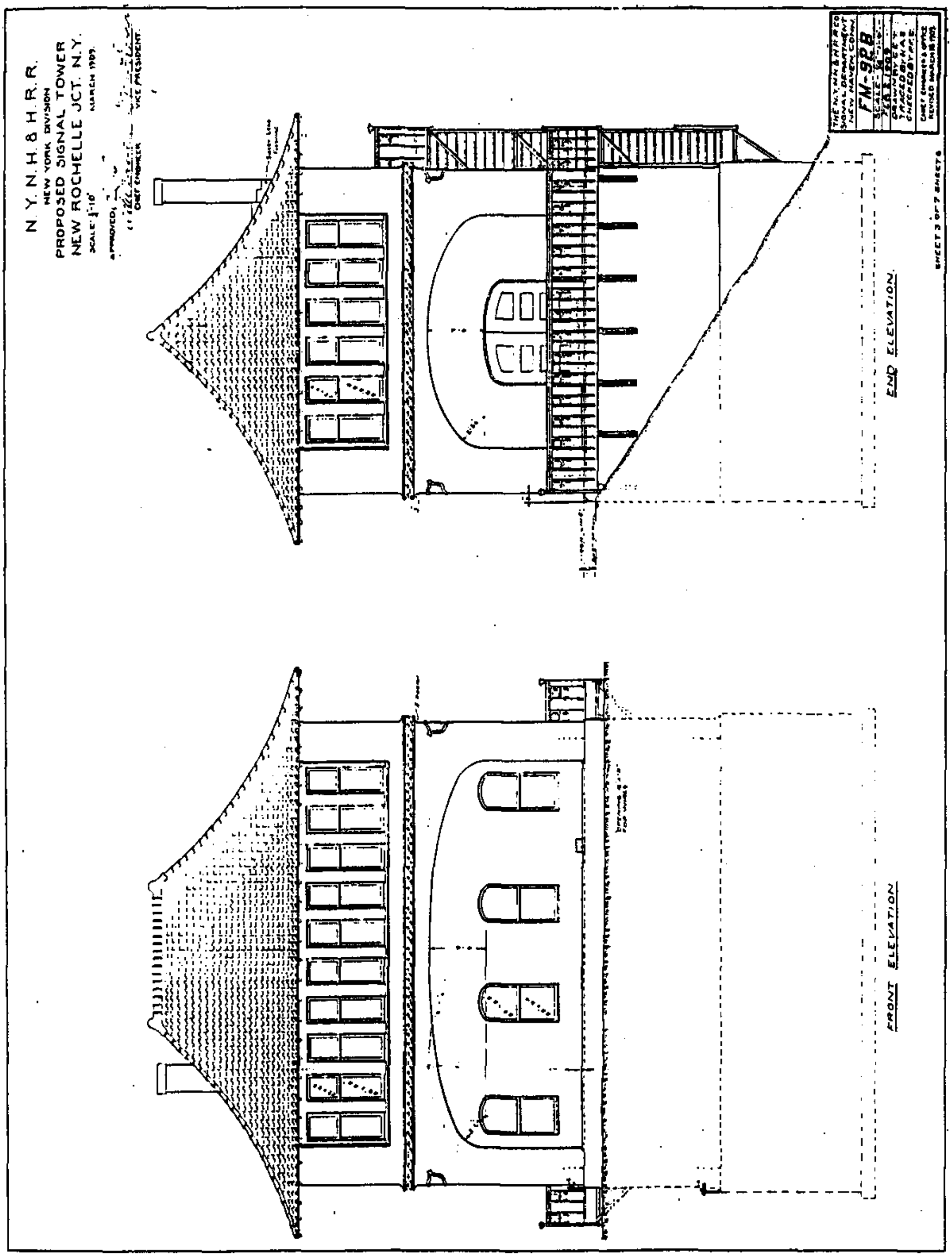
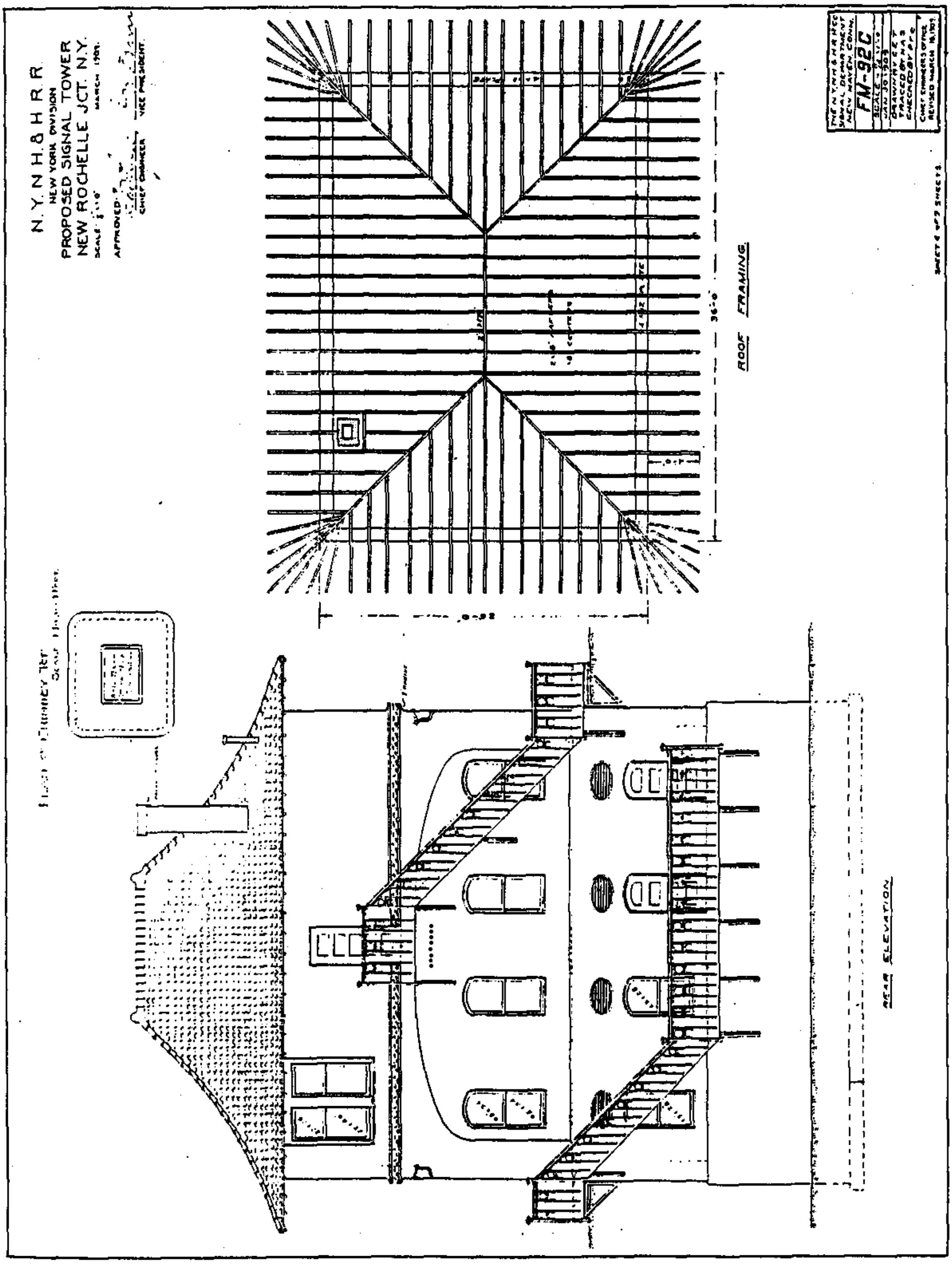
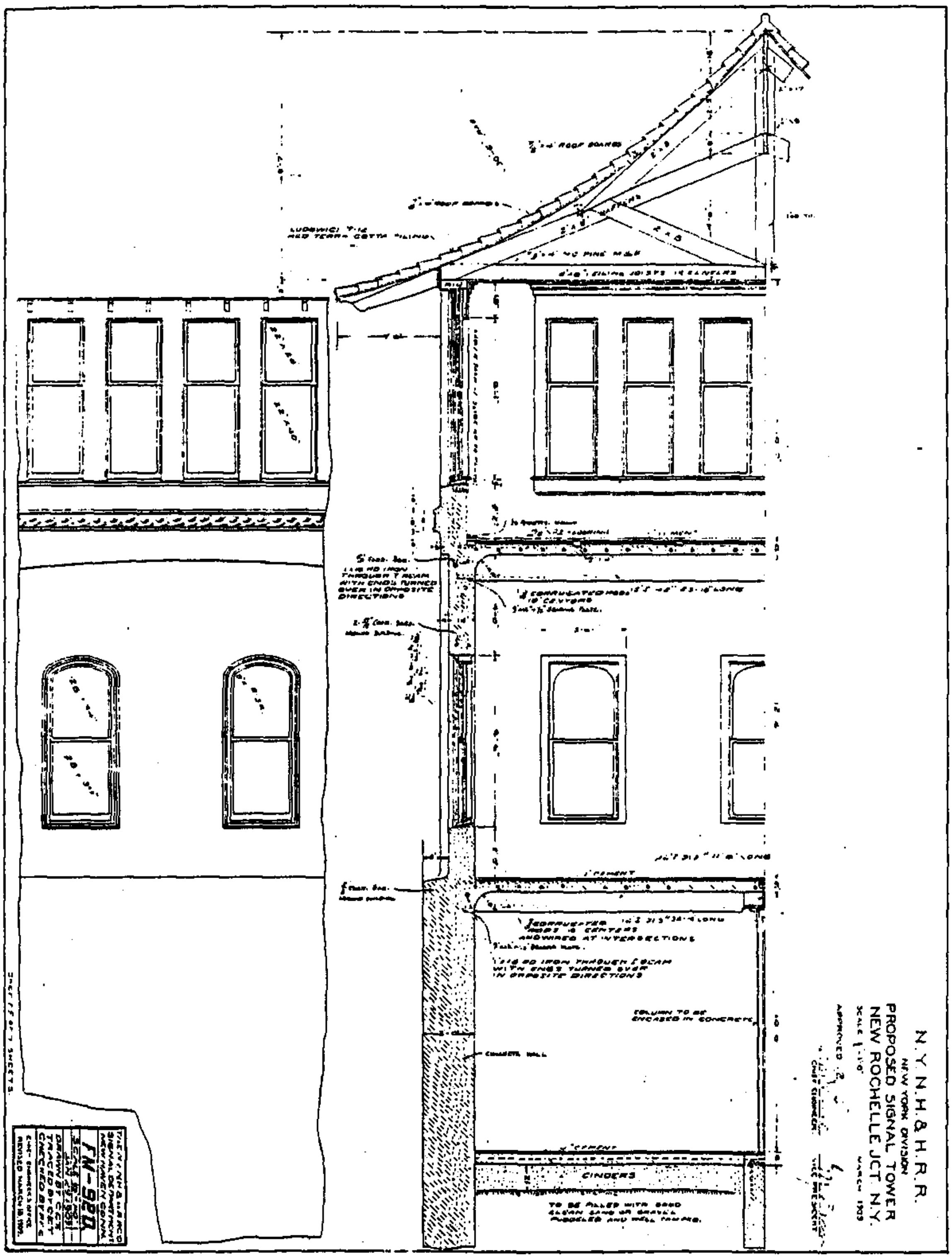
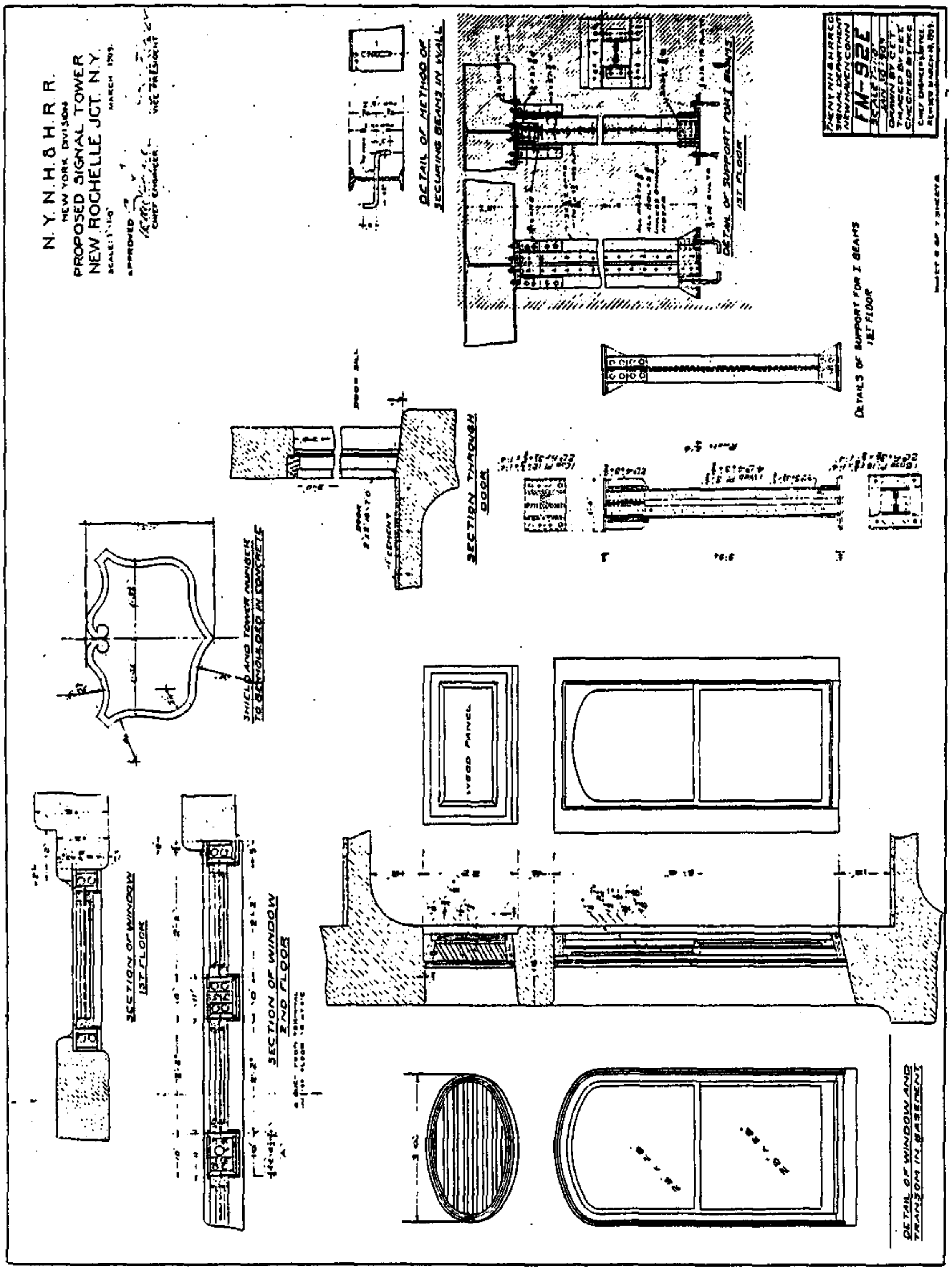
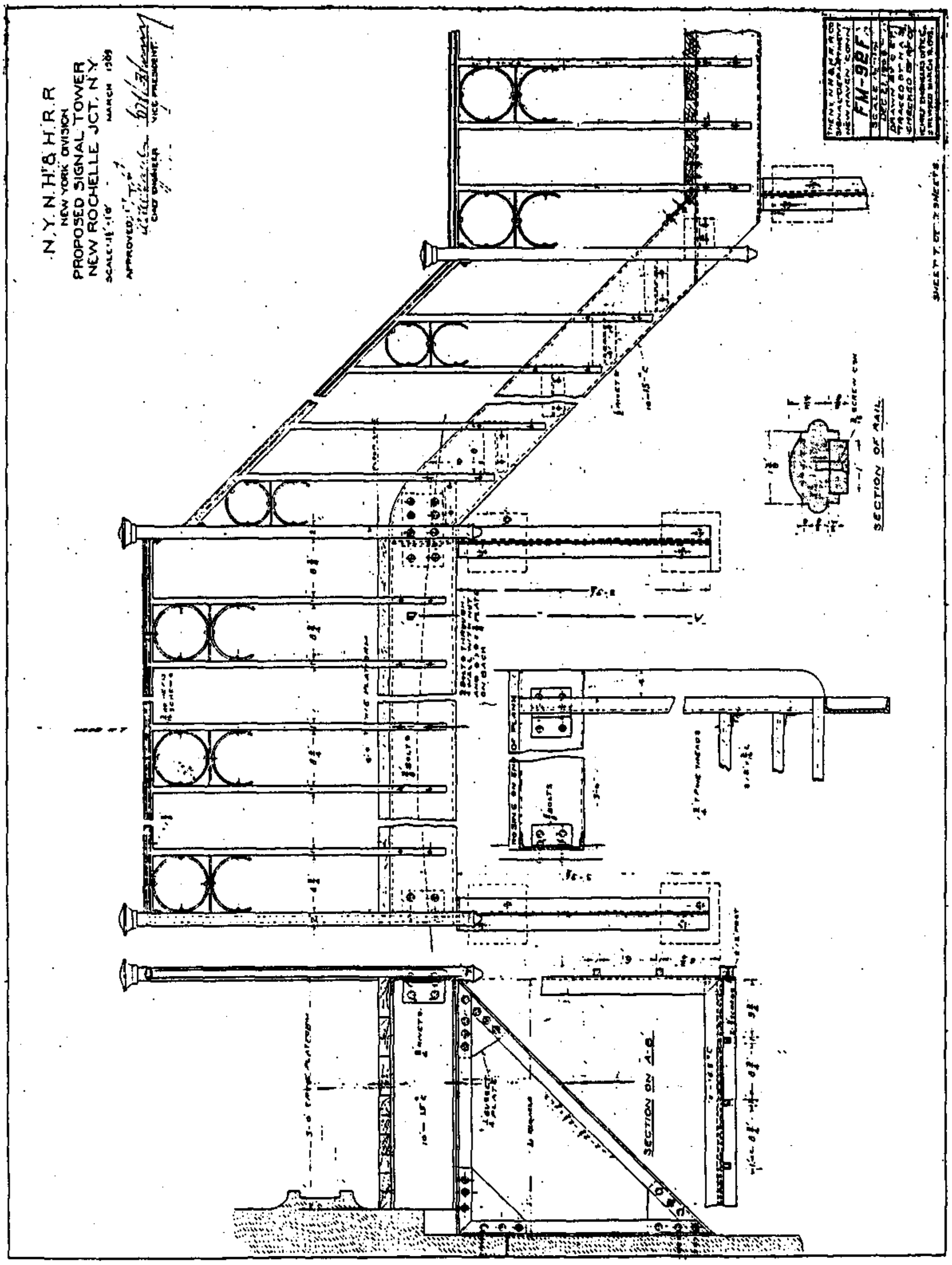
FM-92A


N.Y.N.H.&H.R.R.
NEW YORK DIVISION
PROPOSED SIGNAL TOWER
NEW ROCHELLE JCT. N.Y.
MARCH 1909
END ELEVATION
FRONT ELEVATION


N.Y.N.H.&H.R.R.
NEW YORK DIVISION
PROPOSED SIGNAL TOWER
NEW ROCHELLE JCT. N.Y.
ROOF FRAMING
REAR ELEVATION
FM-92C


CINDERS
N. Y. N. H. & H. R. R.
NEW YORK DIVISION
PROPOSED SIGNAL TOWER
NEW ROCHELLE JCT. N.Y.


N.Y.N.H.&H.R.R.
NEW YORK DIVISION
PROPOSED SIGNAL TOWER
NEW ROCHELLE JCT. N.Y.
DETAIL OF METHOD OF SECURING BEAMS IN WALL
DETAIL OF SUPPORT FOR I BEAMS 1ST FLOOR
SECTION THROUGH DOOR
SHIELD AND TOWER NUMBER TO BE MOULDED IN CONCRETE
WOOD PANEL
SECTION OF WINDOW 1ST FLOOR
SECTION OF WINDOW 2ND FLOOR
DETAIL OF WINDOW AND TRANSOM IN BASEMENT


N.Y.N.H.&H.R.R
NEW YORK DIVISION
PROPOSED SIGNAL TOWER
NEW ROCHELLE JCT. N.Y.
SECTION OF RAIL
SECTION ON A-B